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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,761	07/02/2001	Marcel F.C. Schemmann	US010310	2010

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EXAMINER	
TRAN, DZUNG D	
ART UNIT	**PAPER NUMBER**
2638	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/896,761	SCHEMMANN ET AL.	
	Examiner	Art Unit	
	Dzung D. Tran	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9 and 17-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Lemson US patent no. 5,457,811.

Regarding claim 1, Lemson discloses in figure 6, an apparatus for communicating radio frequency (RF) informational signals having a RF power level, through an optical link medium (figure 6), said apparatus comprising:

a first conductor (equivalent to system RF input) adapted to carry said informational signals as electrical signals into the apparatus;

a processor combiner 60 (equivalent to RF level sensor) having an input node at a splitter 52a operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 6, col. 16, lines 39-43);

a first signal changing device 32 (e.g., col. 12, lines 45-47 discloses the first signal level changing device comprises both a first variable attenuator and a first gain controlled amplifier) adapted to be operatively controlled by the control signal that is generated from a processor combiner 60 (equivalent to RF level sensor), and adapted

to attenuate/amplify the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 6);

a transmitter (22) adapted to transmit the electrical signals as optical signals into the optical link medium;

a receiver (22) adapted to receive the optical signals from the optical link medium, said receiver being operatively coupled to a second conductor adapted to carry said informational signals as electrical signals out (system RF output) at output port 38 of the apparatus.

Regarding claims 3 and 6, Lemson further discloses the control signal is communicated through said optical link medium 22 as an RF encoded control signal (e.g., RF control signal modulated by control signal modulator 44) and a second signal changing device 34 (e.g., col. 12, lines 45-47 discloses the second signal level changing device 34 comprises both a second variable attenuator and a second gain controlled amplifier) operatively coupled to the receiver (e.g. receiver comprising: photo-diode 22, RF pre-amp 28, control signal demodulator 46) and adapted to attenuate/amplify the electrical signal on second conductor (e.g., system RF output).

Regarding claims 4 and 5, Lemson teaches the control device controls a first attenuator and a second attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the attenuation setting of the first and second attenuators should be adequate for some system (col. 17, lines 59-65).

Regarding claim 7, Lemson discloses the second signal level changing devices 34 may comprise both a variable attenuator and a gain controlled amplifier, see col. 12, lines 44-46, thus it inherent that second signal level changing device comprise a second RF amplifier (does not show) and is controlled by the control signal.

Regarding claims 8 and 9, Lemson teaches the control device controls a first attenuator and a second attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the attenuation setting of the first and second attenuators should be adequate for some system (col. 17, lines 59-65).

Regarding claim 17, Lemson discloses an apparatus for enhancing the dynamic range of an optical transmission system (abstract), the apparatus comprising:

a transmitter (22) adapted to transmit the electrical signals as optical signals into the optical link medium;

a receiver (22) adapted to receive the optical signals from the optical link medium, said receiver being operatively coupled to a second conductor adapted to carry said informational signals as electrical signals out (system RF output) at output port 38 of the apparatus.

RF stabilization system having the processor combiner 60 controls the first and second signal level changing devices 32, 34 in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) wherein each of the first and second signal level changing device comprises both a variable attenuator and a gain controlled amplifier, see col. 12, lies 46-47 and the first signal

level changing devices 32 is connected to the transmitter and second signal level changing devices 38 is connected to the receiver (see figure 6).

Regarding claim 18, Lemson teaches the control device controls the first and second signal level changing devices 32, 38 in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the setting of the first and second signal level changing devices should be adequate for some system (col. 17, lines 59-65).

Regarding claim 19, Lemson further discloses the transmission links can includes, e.g. , typical RF transmission links, fiber optical links, free space optical links, radio wave transmission links, and any combination of above elements which is inherent that the system can be a cable television (CATV) system (see col. 10, lines 17-21 of Lemson, page 1, lines 11-13 of specification).

Regarding claim 20, Lemson discloses an apparatus for enhancing the dynamic range of an optical transmission system (abstract), the apparatus comprising:

a processor combiner 60 (equivalent to RF level sensor) having an input node at a splitter 52a operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

the first and second signal level changing device 32, 34 comprises both a variable attenuator and a gain controlled amplifier, see col. 12, lies 46-47.

Lemson further discloses the first and second signal level changing device 32, 34 is adapted to be operatively controlled by the control signal, and adapted to

attenuate/amplify the electrical signals on the first conductor prior to being communicated through said optical link medium and the second conductor in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) which inherent that control devices able to adjust the amplifying level of the gain controlled amplifier or adjust the attenuation of the variable attenuator at any level.

Regarding claim 21, Lemson discloses a method for enhancing the dynamic range of an optical transmission system (abstract), the method comprising:

a RF level sensor (equivalent to processor combiner 60) for measuring a first RF power level of the RF electronic signals to be transmitted;

a first signal level changing devices 32 for transforming the RF electronic signal and outputting the RF electronic signals within 0.5 dB of the first RF level (col. 17, lines 59-65).

Regarding claim 22, Lemson discloses the noise power ratio of the transmitted RF electronic signal is greater than it would be if transforming has not been perform (col. 18, lines 38-52).

Regarding claim 23, Lemson discloses when the transforming is attenuating; the transformed RF power level is less than the first RF power level (col. 17, lines 43-54).

Regarding claim 24, Lemson discloses when the transforming is amplifying; the transformed RF power level is greater than the first RF power level (col. 21, lines 54-64).

Regarding claim 25, Lemson further discloses the transmission links can includes, e.g. , typical RF transmission links, fiber optical links, free space optical links, radio wave transmission links, and any combination of above elements which is inherent that the system can be a cable television (CATV) system (see col. 10, lines 17-21 of Lemson, page 1, lines 11-13 of specification).

Regarding claim 26, Lemson discloses an apparatus for communicating radio frequency (RF) informational signals having a RF power level, through an optical link medium (figure 5), said apparatus comprising:

a first conductor (equivalent to system RF input) adapted to carry said informational signals as electrical signals into the apparatus;

a processor combiner 60 (equivalent to RF level sensor) having an input node at a splitter 52a operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

a first signal changing device 32 (e.g., col. 12, lines 45-47 discloses the first signal level changing device comprises both a first variable attenuator and a first gain controlled amplifier) adapted to be operatively controlled by the control signal that is generated from a processor combiner 60 (equivalent to RF level sensor), and adapted to attenuate/amplify the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 6);

a transmitter (22) adapted to transmit the electrical signals as optical signals into the optical link medium;

a receiver (22) adapted to receive the optical signals from the optical link medium, said receiver being operatively coupled to a second conductor adapted to carry said informational signals as electrical signals out (system RF output) at output port 38 of the apparatus.

a processor combiner 60 (equivalent to RF level sensor) controls a first attenuator and a second attenuator in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54) and prefers an accuracy of 0.5 dB for the attenuation setting of the first and second attenuators should be adequate for some system (col. 17, lines 59-65).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemson US patent no. 5,457,811.

Regarding claims 10, 13, 15 and 16, Lemson discloses an apparatus for enhancing the dynamic range of an optical transmission system (abstract), the apparatus comprising:

a processor combiner 60 (equivalent to RF level sensor) having an input node at a splitter 52a operatively coupled to the first conductor, adapted to measure the RF power level and to output a control signal according to said RF power level (figure 5, col. 16, lines 39-43);

a first signal changing device 32 (e.g., col. 12, lines 45-47 discloses the first signal level changing device comprises both a first variable attenuator and a first gain controlled amplifier) adapted to be operatively controlled by the control signal that is generated from a processor combiner 60 (equivalent to RF level sensor), and adapted to attenuate/amplify the electrical signals from the first conductor prior to being communicated through said optical link medium (see figure 6).

Lemson further teaches the processor combiner 60 controls the first and second signal level changing devices 32, 34 (e.g. each of the first and second signal level changing device comprises both a variable attenuator and a gain controlled amplifier, see col. 12, lies 46-47) in response to the detected or measured level to output electrical signal at the RF power level (col. 17, lines 44-54), Lemson also teaches the processor combiner 60 send a control signal to adjust the gain controlled amplifier and 32', 34' and the variable attenuator 32, 34 (see col. 22, line 60 to col. 23, line13). Thus, if it is not inherent it would have obvious that the processor combiner 60 able to adjust the amplifying level of the gain controlled amplifier 32', 34' or adjust the attenuation of the variable attenuator 32, 34 at any power level (e.g. the amplification perform by the first RF varies inversely with the sensor output (claim 10) or the magnitude of the amplification performed by the second RF amplifier is approximately

the same as the magnitude of the attenuation performed by the first RF attenuator (claim 13) or the attenuation performed by the second attenuator varies inversely with the sensor output (claim 15) or the magnitude of the attenuation performed by the second RF attenuator is approximately the same as the magnitude of the amplification performed by the first RF attenuator (claim 16). This supporting rational is based on a recognition that the claimed difference exist not as a result of an attempt by applicant to solve a problem but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Regarding claim 11, Lemson discloses the a processor combiner 60 output (equivalent to sensor output) is adapted to be transmitted to RF receiver 22 (see figure 6).

Regarding claim 12, Lemson discloses the first and second signal level changing devices 32, 34 may comprise both a variable attenuator and a gain controlled amplifier (col. 12, lines 44-46) and is controlled by the control signal (figure 6).

Response to Arguments

5. Applicant's arguments filed on 06/09/2005 have been fully considered but they are not persuasive.

A Rejection of claims 1-12 and 17-26 under 35 U.S.C. 102(b) as being anticipated by Lemson US patent no. 5,457,811.

Applicant argues Lemson does not disclose or suggest "the amplifier within the transmitter section is adapted to receive the control signal from the RF level sensor" that added in the independent claims. However, Lemson clearly discloses a signal changing device 32 (e.g., col. 12, lines 45-47 discloses the signal level changing device comprises both a variable attenuator and a gain controlled amplifier) adapted to be operatively controlled by the control signal that is generated from a processor combiner 60 (equivalent to RF level sensor), see figures 5 and 6.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran
08/15/2005

KENNETH VANDERPUYE
PRIMARY EXAMINER